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APPLICATION NO..	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,905	11/06/2006	Makiko Kitazoe	029567-00010	5377

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EXAMINER	
CHEN, KEATH T	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
12/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com
IPMatters@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary	Application No.	Applicant(s)	
	10/591,905	KITAZOE ET AL.	
	Examiner	Art Unit	
	Keath T. Chen	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *10-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/07/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted. Groups:

I. Claims 1-9, drawn to apparatus, classified in class 118, subclass 724.

II. Claims 10-18, drawn to method, classified in class 427, subclass 545.

The inventions listed as Groups I & II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: *a priori* common feature is present between group I and group II is the components of claim 1. This common inventive concept is not special (e.g. see art rejection below) and lack of unity of invention, there is lack of unity *a posteriori*.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

1. During a telephone conversation with George Oram on 11/19/07, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

2. In abstract, lines 3-4, "without heating a catalytic body to not less than 2000° C", which is also cited in many places in the specification. Applicant should clarify this statement because this is not commensurate with other citings in the specification, for example, [0007] lines 4-6, "catalytic body ... has been heated to not less than 2000° C".

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The "without etching the catalytic body itself"

critical or essential to the practice of the invention, but is not enabled by the disclosure.

In abstract, lines 2-3, "suppresses the corrosion-induced degradation of a catalytic body by a cleaning gas", and similarly in many places in the specification, indicating the etching can be lowered but not eliminated. Furthermore, there is no discussion of how the etching of the catalytic body can be totally eliminated in the specification. See *In re Mayhew*, 527 F.2d 1229, 1233, 188 USPQ 356, 358 (CCPA 1976).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi (US 6375756, hereafter '756), in view of Bridges (US 5012868, hereafter '868) and Reale (US 5451754, hereafter '754).

'756 teaches some limitations:

Claim 1: A self-cleaning catalytic chemical vapor deposition apparatus (Fig. 1, col. 4, line 59) which forms a thin film by using the catalytic action of a catalytic body (#3, col. 5, lines 11-17) which is resistance heated (by power source #30, col. 5, lines 11-13) within a reaction chamber capable of being evacuated to a vacuum (col. 4, line 60). Applicant's claimed requirements "which removes an adhering film which has adhered to the interior of the reaction chamber without etching the catalytic body itself on the basis of a radical species generated when an introduced cleaning gas comes into contact with the resistance heated catalytic body and is decomposed, the bias voltage applied to the catalytic body, and a polarity of the bias voltage" are considered intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Claim 2: The self-cleaning catalytic chemical vapor deposition apparatus according to claim 1, characterized in that in addition to the aforementioned constitution, a radical species generator (plasma generation, col. 7, lines 45-48) which decomposes the cleaning gas into a radical species and introduces the radical species into the reaction chamber is provided.

'756 further recognized the hot element reacts with the cleaning gas (col. 2, lines 52-63), particularly corrosion occurs below 2000° C (col. 6, lines 19-26).

'756 does not teach the other limitations of

Claim 1: The apparatus comprises a power supply to apply a bias voltage to the catalytic body and a changeover switch which changes the polarity of the bias voltage to be applied.

Claim 9: The self-cleaning catalytic chemical vapor deposition apparatus according to claim 1, characterized in that there is provided a monitoring device which detects the occurrence of etching of the catalytic body itself on the basis of electric resistance of the catalytic body.

'868 is an analogous art in the field of corrosion inhibition in a heating electrode (abstract), particularly in providing maximum corrosion protection over an extended working life at minimum cost (col. 3, lines 54-59). '868 teaches by applying a DC bias voltage to the heating circuit to inhibit corrosion (col. 4, lines 1-4) and a switch (#238, Fig. 3) to adjust positive or negative polarity (col. 8, lines 37-40) and an ability to maintain neutral potential (col. 9, lines 21-26). '868

further provides a current sensor (#55 in Fig. 1 or #251, Fig. 3, col. 9, lines 51-62) to control the corrosion inhibition polarity.

'754 is an analogous art in the field of controlling charge of substrate (abstract) particularly in sputtering metal film (col. 3, lines 52-53). '754 teaches a changeover switch which change polarity of the bias voltage, including ground, applied to the shield (col. 4, lines 30-39) to control the charge deposited on the substrate (#14).

At the time the invention was made, it would have been obvious to a person having ordinary skill in the art to have combined '868 and '754 with '756. Specifically, to have applied a bias voltage, as taught by '868, to the hot element (#3) in the apparatus of '756, and furthermore to have adopted the bias voltage switch as taught in Fig. 1 of '754 to switch the polarity as taught by '868. Furthermore, to have adopted a DC current sensor, as taught by '868, to control the polarity of inhibition. This current sensor would have been responsive to the resistance of the catalytic body (hot element).

The motivation would have been to inhibit corrosion as taught in both '756 (col. 6, lines 19-26) and '868 (col. 4, lines 1-4) and to provide polarity switch capability as taught by '868 (col. 8, lines 37-40 and col. 9, lines 21-26).

The apparatus of the above combination would have the capability of supplying various gases and setting polarity according to the gases species of the claim limitations of claims 3-8 (all intended use).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keath T. Chen whose telephone number is 571-270-1870. The examiner can normally be reached on M-F, 8:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KC K.C.

12/6/7